Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 181602

Subject Name: Data Compression

Date: 12/05/2012 **Time: 10.30 am – 01.00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Answer the following	
		i. Differentiate between lossy n lossless compression	**03**
		ii. What is the need of data compression	**02**
		iii. List the various applications of Huffman coding technique	**02**
	(b)	Answer the following	
		i. Define search buffer and look ahead buffer's use in LZ77 algorithm	**03**
		ii. Write name of any four dictionary based approaches.	**02**
		iii. What is the redundancy of a code? How can you define it and calculate it?	**02**
Q.2	**(a)**	Explain what is Modeling? Write a note on statistical modeling	**07**
	(b)	Explain Sliding Window Compression with the help of an example	**07**
		OR	
	(b)	What do you understand by information and entropy? Find the first order entropy over an alphabet A={a1,a2,a3,a4} where p(a1)=p(a2)=p(a3)=p(a4)=1/4	**07**
Q.3	**(a)**	Explain Shannon – Fino compression technique with the help of an example	**07**
	(b)	What is dictionary technique of compression? Explain it's types	**07**
		OR	
Q.3	**(a)**	Explain what is DCT with the help of an example	**07**
	(b)	What is arithmetic coding compare it with Huffman coding and also list the significance of each	**07**
Q.4	**(a)**	Explain Run Length encoding with the help of a suitable example	**07**
	(b)	Write a note on Adaptive huffman compression technique also compare it with Huffman technique	**07**
		OR	
Q.4	**(a)**	i) Compare and contrast LZ77 and LZSS techniques ii) Compare and contrast speech compression and text compression	**07**
	(b)	Write a note on quantization.	**07**
Q.5	**(a)**	What is entropy encoding? Explain it's significance in quantization?	**07**
	(b)	What is LZW compression? Explain with the help of an example	**07**
		OR	
Q.5	**(a)**	Write a note on silence compression	**07**
	(b)	Write a note on JPEG compression	**07**

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